OFFICIAL GOVERNMENT COPY
79.35
COPY

Mike Sharp

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

34.26282 -116.91833 R-5

REPLY TO: 3430 Evaluation February 2, 1979

SUBJECT: Dwarf mistletoe Control in the Big Bear North Shore Recreation Area

TO: Forest Supervisor, San Bernardino N.F. 420 acres

At the request of District Ranger Jere Mitchell, Ed Wood and Dave Schultz from the FIDM Staff in the Regional Office, and Barbara Backland from Big Bear Ranger District, inspected a small dwarf mistletoe infestation in a proposed campground in the Big Bear Lake North Shore Recreation Area. This report documents their findings and includes our recommendations; briefly, they found that while the infestation is small and spreading very slowly, the trees are of very high value and capable of responding to control measures. They recommend control be done before the campground is built.

The infestation of western dwarf mistletoe (Arceuthobium campylopodum) is in Jeffrey pine, the only tree species found in these stands which is susceptible to the parasite. Dwarf mistletoe is infesting pines in two adjacent stands. One stand is composed of mature, widely spaced pines where the parasite has formed brooms mainly in the lower portions of the crowns. Because of the size of the trees, the absence of an understory, and the location of the brooms, dwarf mistletoe will spread very slowly in this stand. Its main effect will be to gradually weaken the host trees to the point where they will become susceptible to attack by bark beetles or flatheaded borers. Construction of the campground will hasten the process. Pruning of dwarf mistletoe brooms is effective in restoring vigor to trees already declining from the effects of the parasite. Barbara, Dave and Ed identified eleven trees which they felt would respond to broom pruning. These trees are tagged at their bases; Barbara has the location notes.

Time did not allow for more than a hurried inspection of the other infested stand, which is composed of trees ranging in size from large poles to about 26-28 inches dbh. Certain characteristics of this stand and the infections in individual trees indicate that it is possible to eradicate the pest using the attached control options. First, the stand is patchy, with clumps of trees separated by clearings. Second, most of the infected trees have Hawksworth ratings of 1 or 2, rarely 3. FIDM recommends a combination of pruning lightly infected trees to remove all visible infections and removal of a few heavily infected individual trees. These

OFFICIAL GOVERNMENT COPY

combined treatments would be confined to approximately 30-40 trees.

Dwarf mistletoe control in recreation areas is usually accomplished by tree climbers or operators working from hydraulic platforms (cherry pickers), often on a contract. Obviously this is expensive. However, dwarf mistletoe control funds are available from FIDM where such control can be justified, as in this case where the process is fairly simple and the stands have high value. If you agree with FIDM that control is desirable, a further inspection of the site should be made to identify the trees to be pruned or removed. Then a project proposal should be sent to the Staff Director, FIDM, for review.

Any further questions should be directed to Dick Smith, Pathology Group Leader, FIDM, who is assuming Ed Wood's duties in the North Shore Recreation Area. Ed is departing for Region 3.

W. L. Freeman

WILFRED L. FREEMAN, JR., Director
Forest Insect and Disease Management

Enclosure

OFFICIAL GOVERNMENT COPY

CONTROL OPTIONS FOR THE TREATMENT OF DWARF MISTLETOE INFECTED PONDEROSA, JEFFREY, AND COULTER PINES IN SOUTHERN CALIFORNIA RECREATION AREAS

In developing stand management prescriptions for ponderosa, Jeffrey and Coulter pine stands infected with dwarf mistletoe the following stand treatments or combinations of stand treatments may be used to control or lessen the impact of this pest on forest recreation stands. These suggested treatments are arranged by age classes of the recreation stands.

A. Even aged (single storied) stands above 6" dbh.

1. Thin mistletoe infected stands to maintain optimum growth of the residuals and reduce stress. Select against mistletoe infected trees. Consider the removal of all trees with Hawksworth dwarf mistletoe rating of 5 and 6. Such trees will probably die within the next 10 year period, most likely during the next drought. Treat all freshly cut stumps with borax to prevent invasion by Fomes annosus.

2. Broom prune high value dwarf mistletoe infected trees if after removal of the dwarf mistletoe brooms the trees will have live crown ratio of 30% or more.

3. When treating stands the creation of buffer strips should be considered at the margins of dwarf mistletoe infestations to prevent spread into or out of the treated area. These buffers should be used in the following order of priority.

   a. Natural occurring buffers (meadows, roads and changes in type).

   b. Type conversion, by removal of susceptible species.

   c. Clear cut strips.

   d. Periodic (2 year) pruning of strips of lightly to moderately infected pines.

4. Pruning of all infected branches in infected trees in an attempt to eradicate this pest is generally not recommended. But in exceptional cases, where attempted on high value trees, this treatshould be restricted to trees with a dwarf mistletoe rating of 1 or 2 which have infections restricted to the lower 1/3 of the crown. When pruning, remove all branches lower ½ of the crown. Again, do not attempt if this will result in a tree with a crown of less than 30% or if the tree will be exposed to continued infection from adjacent infected trees. (Schedule 6 years of resurvey/retreatment at 2 year intervals).

OFFICIAL GOVERNMENT COPY

5. Eradication of small infestations of dwarf mistletoe patches in pole or mature timber should be attempted only in areas of about 1 acre or less and should be inspected and retreated every 2 years of a 6 year period.

B. Even aged stands under 6" dbh

1. Residual Removal - where infected overstory residuals threaten young developing stands, remove the infected residual trees and treat the young stands by thining or pruning mistletoe out of infested understory stand. Plan for resurvey and retreatment of the young stand every 2 years for a 6 year period.

2. Stand destruction. Young stands (seedling-sapling) moderately to heavily infected should be destroyed along with infested overstory trees within and at margins of the treated stand. Regenerate, resurvey, and retreat any new appearing infections along margins of treated area.

C. All aged or multistoried stands.

1. If regeneration of the stand is desired the following steps should be taken in order:

   a. Remove overstory.

   b. Remove all infected trees from released understory.

   c. Create a buffer strip around released stand, if needed.

   d. Run post treatment surveys every 2 years for 6 years.

2. If it is desireable to retain the overstory

   a. Remove infected understory in competition with overstory trees.

   b. Broom prune highly valuable overstory trees.

   c. Replant openings in infected stands as they develop, with resistant species. (Oaks, cedars, firs, sugar pine).